9 JUN 1969

MEMORANDUM FOR: Chief, Information Processing Staff, O/PPB
Information Processing Coordinators

SUBJECT : Report on Federal Records Conference

1. At the Eighth Annual Federal Records Management Officers Conference last week papers were presented on the following information which I believe may be of interest to you.

a. UNICON--690: (Unidensity Coherent Light Data Processing System is operational and the first will be delivered this fall.) This Laser Mass Memory System developed by Precision Instruments Company, Palo Alto, California, provides the capability of permanently recording and reproducing more than a trillion bits of digital data under computer control. This compares with some 5,600 reels of tape, on line. It has a data transfer rate of 500,000 bytes per second. The new permanent recording process employs a laser to vaporize minute (4 x 3 micron) holes in the metallic surface of changeable recording strips mounted on two independent read/write drums. The system's 400 data strips (4.75" x 31.25") are in 18 removable packs. Each data strip has 2.9 billion bits. Besides the laser Recording Unit the system includes a Recorder Control Unit with a hardware and software interface to the user's computers. (Cost: about $750,000.)

b. Sylvania--LF-500: Instrumentation Recorder using a laser optical system on 8 mm photographic film (instead of magnetic heads and oxide tapes) permanently records 180,000 bits per inch on 36 channels at a rate of over ten million bits per second. The LF-500 has 2,000 feet of film on a 10 1/2 inch reel providing information storage in one tenth the space required by other systems.

c. Magnavox Corporation--Visual Reproduction of Magnetic Tapes: Although still a laboratory process the Magnavox engineers have reproduced magnetic tapes through optical systems. Further, thru their signal enhancement they have visually reproduced degaussed and degraded

magnetic tape data.

d. Bell Laboratories--Holography: Other developments still in the laboratories are the ultra sonic deflection of light beams and the high density optical photo storage of 100 million bits per second with storage of one billion per square inch.

e. Newell Industries--Tape Winding: The damaging effects of humidity and temperature changes are eliminated for long-stored tapes by the high compression magnetic tape winding process of the Newell Industry.

f. National Archives--Tape Life: Recent research by National Archives among magnetic tape producers and users has determined a general agreement that magnetic tape is not an Archival storage media. They found the tape's useful life to range between ten and fifteen years, at which time the error rate averages 87 per tape with a high of 200 drop-outs on some tapes in the survey. National Archives expects to announce ten to twelve years as a safe life expectancy for magnetic tape files.

g. Federal Records Management: The necessity and objectives of continuing Federal inventories of magnetic tapes was explained and the general need for better documentation and scheduled preservation or disposition of tape files was stressed. A recent paper by Yale Professor Richard Ruggles on "Preservation of Machine Readable Records" was referenced. A copy was obtained for Agency IPC's. Additional copies may be obtained from the Agency Records Management Officer.

2. The Records Management Conference with the Theme of "Data Compaction" emphasized storage and retrieval systems rather than data processing and also presented several papers on microfilming systems and technology. These included: Microfilm Equipment Selection Criteria, Computer Output Microfilm (COM) Systems, Social Security's new provision of Microfiche files in its field offices, the National Cash Register's super microfiche, the 150 to 1 "PCMI", plus other developments in microform technology.

3. We have some additional information here and can identify the people who made the presentations if you are interested in pursuing any of these systems further.

/s/ [redacted]

Information Processing
Coordinator, DD/S

Attachments
Professor Ruggles' Paper

DDS/SSS: [redacted] (6 June 1969)
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